

WHAT IS CLAIMED IS:

1. An image processing method of creating a reproduced image by executing image processing on digital image data obtained by a digital camera, comprising:

a step of determining at first a density conversion condition for an image expressed by the digital image data;

a step of determining next a gradation conversion condition for the image expressed by the digital image data on the basis of the density conversion condition;

a step of modifying the digital image data on the basis of at least one of the density conversion condition and the gradation conversion condition; and

a step of thus creating the reproduced image.

2. An image processing method of creating a reproduced image by executing image processing on digital image data obtained by a digital camera, comprising:

a step of separating the digital image data into density component data and color component data;

a step of determining a density conversion condition for converting a density of the density component data, and determining a gradation conversion condition for converting a gradation of the digital image data on the basis of the density conversion condition;

a step of modifying the density component data in accordance with the density conversion condition and the gradation conversion condition;

a step of synthesizing the modified density component data with the color component data; and

a step of thus creating the image data for obtaining the reproduced image.

3. An image processing method according to claim 1 or 2, wherein the density conversion condition is determined based on a characteristic value of the image expressed by the digital image data.

4. An image processing method according to claim 3, wherein the characteristic value of the image is a mean value of densities of the digital image data.

5. An image processing method according to claim 3, wherein the characteristic value is a weighted mean value based on a weight coefficient determined by a color in each pixel of the digital image data.

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6. An image processing method according to claim 1 or 2, wherein the gradation conversion condition is so determined as

to harden and soften a tone of the image expressed by the digital image data on the basis of a predetermined value.

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7. An image processing method according to claim 1 or 2, wherein the density conversion condition is, when the image expressed by the digital image data is displayed on display means, determined by an instruction from outside on the basis of the displayed image.

8. An image processing method according to claim 1 or 2, wherein the gradation conversion condition is determined so that a brightest area of the reproduced image becomes white or comes to have a density approximate to the white.

9. An image processing method according to claim 1 or 2, wherein the gradation conversion condition has a lower limit value thereof.

~~10.~~ An image processing apparatus for creating a reproduced image by executing image processing on digital image data obtained by a digital camera, comprising:

density conversion condition determining means for determining a density conversion condition for an image expressed by the digital image data;

image data converting means for creating the reproduced image by modifying the digital image data on the basis of at least one of the density conversion condition and the gradation conversion condition.

data separating means for separating the digital image data into density component data and color component data;

gradation conversion condition determining means for determining a gradation conversion condition for converting a gradation of the digital image data on the basis of the density conversion condition;

data converting means for modifying the density component data in accordance with the density conversion condition and the gradation conversion condition; and

data synthesizing means for synthesizing the modified density component data with the color component data.

12. An image processing apparatus according to claim 10 or 11, wherein said density conversion condition determining means determines the density conversion condition on the basis of a characteristic value of the image expressed by the digital image data.

13. An image processing apparatus according to claim 12, wherein the characteristic value of the image is a mean value of densities of the digital image data.

14. An image processing apparatus according to claim 12, wherein the characteristic value is a weighted mean value based on a weight coefficient determined by a color in each pixel of the digital image data.

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15. An image processing method according to claim 10 or 11, wherein the gradation conversion condition is so determined as to harden and soften a tone of the image expressed by the digital image data on the basis of a predetermined value.

16. An image processing apparatus according to claim 10

or 11, wherein said density conversion condition determining means determines, when the image expressed by the digital image data is displayed on display means, the density conversion condition by an instruction from outside on the basis of the displayed image.

17. An image processing apparatus according to claim 10 or 11, wherein said gradation conversion condition determining means determines the gradation conversion condition so that the brightest area of the reproduced image becomes white or comes to have a density approximate to the white.

18. An image processing apparatus according to claim 10 or 11, wherein said gradation conversion condition determining means provides the gradation conversion condition with a lower limit value.